

REMARKS**1. Amendment to the title:**

- 5 The title is amended to better reflect the claimed invention.
No new matter is entered.

Consideration of this amendment is requested.

10 **2. Status of the claims:**

Claims 26, 28, and 39-43 have been withdrawn by the examiner.

- 15 The amendments to claims 28, 39, and 41-43 made by the applicant
in the reply of April 19, 2004 are understood to have been
accepted by the examiner. Accordingly the status of these
claims is indicated as "withdrawn" but with said amendments
being formatted as resolved.

20 **3. Objection to claims 23 and 44 regarding term "reaction
layer":**

- Claims 23 and 44 are amended to overcome this objection. These
claims now recite that "at least one reaction layer is formed
25 to enhance an adhesion provided by the transparent adhesive
layer." This limitation clarifies both the type of reaction
and the layers involved. No new matter is entered, please see
paragraph [0008] of the disclosure. In addition, it is noted
that this amendment is in no way made to overcome or circumvent
30 the rejection under U.S.C. 103(a).

Accordingly, withdrawal of this objection is requested.

4. Rejection of claims 23-25, 27, 29-30, and 44 under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (US 6,597,019) in view of Hahn et al. (US 2003/0168664):

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The applicant argues that the examiner's combination lacks fair motivation and thus that the claimed invention is not obviousness in view of the cited art. The applicant's argument does not depend on the amendments made to claims 23 and 44.

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The examiner has stated that the motivation for the combination is that it is commonly desirable to protect an Ag (silver) layer by covering it with a Cr (chromium) layer.

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However, the examiner has not discussed how a Cr layer protects an Ag layer, except to say that it is well known and is evidenced by Hahn. Yet, Hahn does not discuss using the Cr layer to protect the Ag layer. Rather, Hahn teaches that the Cr layer is for adhesion between a p-doped layer and metal layer as follows:

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"[0013] To promote the adhesion of the reflective contact metallization to the p-doped layer, preferably provided therebetween is a radioparent contact layer substantially comprising at least one metal from the group Pt, Pd, Cr."

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Of course, Cr is well known for its *mechanical* protection properties which include surface hardening, increased wear resistance, and improved corrosion resistance. However, looking at Inoue's Fig. 3, it is unclear how a Cr layer disposed on the upper portion of the leadframe 13a would provide

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protection to the leadframe 13a. Actually, the upper portion of the leadframe 13a is already sufficiently protected against mechanical attack by the resin 16 and the resin 18 (see Fig.13). If a Cr layer offers a type of non-mechanical protection that might make it desirable to incorporate such layer into Inoue's LED, the examiner has not mentioned any.

Furthermore, it is doubtful that one of ordinary skill in the art would know how to design such a Cr layer without further instruction. Since typical LED leadframes are made of Ag-plated steel or Ag-plated Cu (copper), the average designer would be faced with significant challenges not addressed by either Inoue or Hahn. For example, since Ag has both higher electrical and thermal conductivity than Cr, adding a significant amount of Cr to the leadframe invites the problems of increased electrical resistance and decreased heat dissipation in the LED. Also, such combination assumes that one of ordinary skill in the art would be able to determine exactly which regions and how much of the leadframe 13a to plate with Cr, since Inoue and Hahn provide no suggestions.

So, not only is a Cr layer unnecessary for mechanical protection of Inoue's LED, such layer may also inhibit the operation of the LED. Thus, there is no fair motivation for one of ordinary skill in the art to use Hahn's Cr and Ag layers in Inoue's LED device. Moreover, adding a Cr layer to Hahn's device may introduce electrical or thermal problems that are not addressed by either cited art.

Reconsideration of claims 23-25, 27, 29-30, and 44 is requested in view of the above argument. Claims 24, 25, 27, and 29-30 are dependent and should be allowed if claim 23 is allowed.

Sincerely,

5 Winston Hsu Date: OCT 28 2004

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